



Psychological Understanding for Prevention of Juvenile Delinquency Through Spatial Design

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Abstract

Children's delinquent behaviour which is often met with rejection and misinterpretation of their immediate environment necessitates specific treatment for juveniles. According to the National Crime Records Bureau, a continuous rise in juvenile offences, particularly in urban India, with a 4.7% increase in 2021 over 2020. At the crux of such deviance is deprivation, poor-quality environment, and ignorance of its value causing adverse childhood experiences, social problems, and mental disorders. Neighbourhood design affects a person's behaviour, directly influencing deviance, or creating a hostile communal bond with a juvenile who might eventually exhibit deviance. This study investigates the intersection of psychology, architecture, and policies regarding juvenile crime prevention at the neighbourhood scale. It explores how the built environment influences the behaviour and development of children, and how strategic design interventions can prevent juvenile delinquency. The study also examines the CPTED approach of various countries to understand the design principles that influence social behaviour. The inferences drawn are applied to understand crime preventive design strategies in Indian urban low-income neighbourhoods with higher juvenile crime rates. While CPTED focuses on general crime prevention strategies, juvenile crimes, which require a more comprehensive approach and an understanding of the root causes of future crimes, have not been delved into. The results achieved provide holistic crime preventive design mechanisms by preventing the creation of a juvenile deviant and by preventing juvenile crime or victimisation. Hence, this paper proposes an integrated framework that promotes holistic neighbourhood design to prevent juvenile delinquency by creating safe, inclusive communities that nurture positive youth development

Keywords: Child Psychology, CPTED, Design Strategies, Deviant Behaviour, Neighbourhood Design.

1. Introduction

The Juvenile Justice Care and Protection Act of 2015 in India defines a "child" as someone under 18 years old. 31,170 cases have been registered against Juveniles in 2021, showing an increase of 4.7% over 2020. 37,444 juveniles were apprehended and the majority of them

were in the age group of 16 years to 18 years (76.2%) during 2021. Crime among juveniles is statistically highest in terms of murder/attempt to murder, assault, rape/intention to sexually assault, and theft/robbery. (Bureau, 2021) With 1.7 million juveniles accused and in need of counselling in 815 juvenile homes, they are overcrowded (Devarmani, 2016).

Such behaviours, falling under delinquent categories in criminal law, exhibit notable deviations from adult norms, often leading to societal rejection and misunderstanding. This phenomenon, termed juvenile delinquency (Academy, 2023), demands scrutiny into its underlying causes to reform societal structures effectively. The escalating rates of adolescent offences, particularly in densely populated urban areas, pose a pressing challenge. Factors such as impoverished environments and neglect can significantly impact brain function, fostering social issues and mental health disorders.

Neighbourhood design plays a pivotal role, as deteriorated environments are associated with higher crime rates, inadvertently attracting criminal activity. (Dzyuban, 2010) This study aims to explore the psychological and social factors influencing juvenile behaviour, particularly deviant actions, and their connection to urban environments. It seeks to compare crime patterns, preventive design strategies, and planning guidelines in India and globally to develop neighbourhood-scale design interventions for crime prevention and rehabilitation. Efforts to optimise urban environments can mitigate crime rates and enhance quality of life, fostering social capital and citizen satisfaction. This approach entails designing neighbourhoods to reduce criminal opportunities, thereby addressing the root causes of deviant behaviour, and promoting a safer, more supportive environment for juveniles.

2. Objectives

1. To study and explore child psychology and early life psychological impacts that govern their extrapolation into deviant behaviour/ juvenile crimes.
2. To identify the factors of the social fabric that impact child psychology and correlate them with the urban environment features.
3. To compare categories in juvenile deviations and analyse patterns of their causes that could help understand design solutions for each of these typologies.
4. To comparatively analyze crime, crime preventive design, and existing design and planning guidelines in India and other countries
5. To formulate a framework of neighbourhood-scale design interventions that could prevent crime and influence rehabilitation.

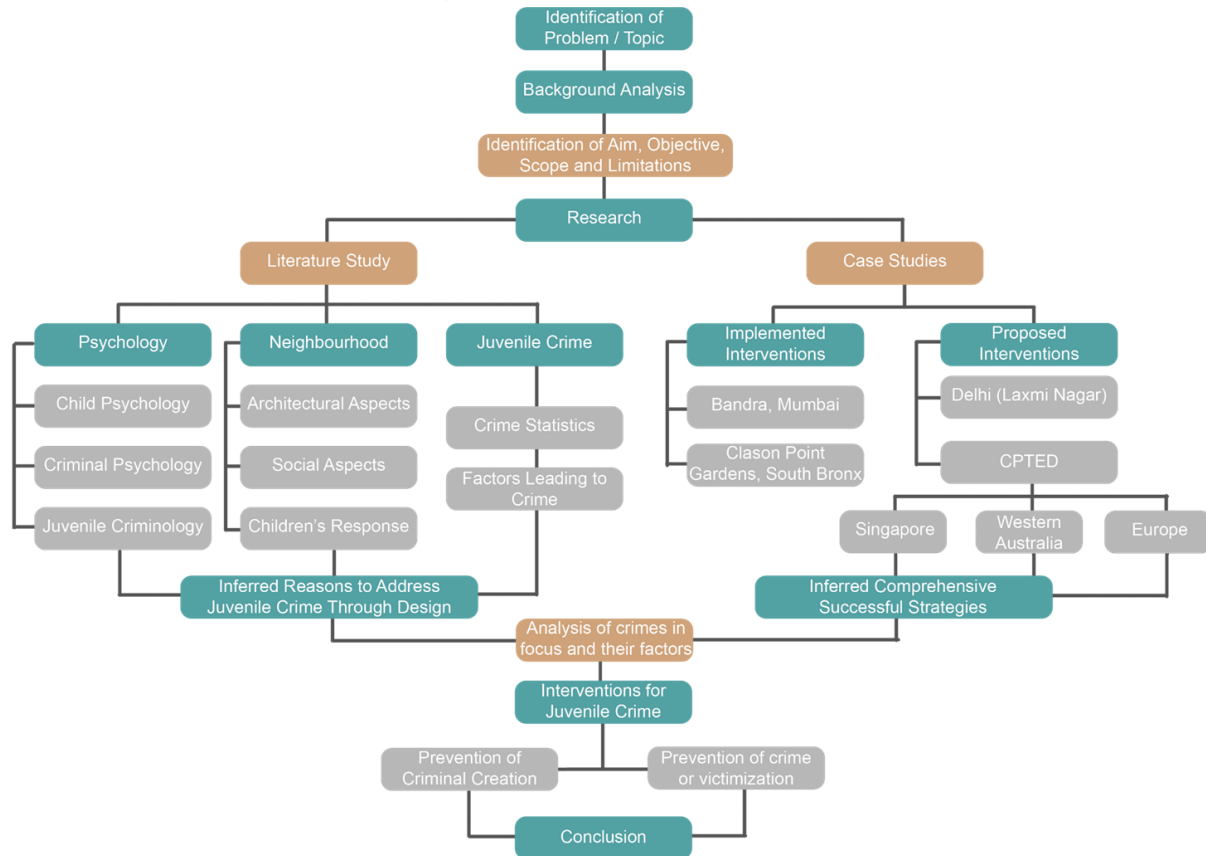
3. Methodology

The study has been divided into 2 broad categories. The first part involved analysing literature and studies on psychology to understand criminal as well as child psychology and eventually merging the two to understand the juvenile criminal psyche. The study delves into the urban fabric and its social as well as architectural characteristics and how these aspects create a response towards criminal mentality and children as a whole. Combining this with juvenile crime statistics and their relevant factors led to inferring the reasons to address juvenile crime through spatial design.

The second part involved analysing case studies of implemented and proposed crime-preventive urban design strategies in India as well as other countries including CPTED incorporated in multiple countries. To achieve a comparative broader perspective, 2 specific locations in Mumbai and New York were studied for their crime preventive tactics. Bandra, Mumbai was selected to understand crime strategies in the urban Indian context while South

Bronx, New York was to study dense urban neighbourhood crime in the West. CPTED proposals of Singapore, Western Australia, and Europe were comparatively analysed based on their core principles, the process/approach taken to derive strategies, the proposed strategies, and the unique features of each country's proposals.

Figure 1: Methodology flowchart



Source: Author

The inferences brought about a comprehensive set of successful strategies for crime-preventive urban design. The inferences led to the eventual analysis of major crimes committed by juvenile offenders with factors for each and the appropriate interventions in terms of spatial design to curb these offences. The outcome has 2 parts. First are the interventions to prevent the creation of juvenile criminals by curbing opportunities for them to commit crimes and creating a nurturing environment for growth. Second, are the interventions to prevent crimes against children that could lead to trauma as a victim and its way back to creating a delinquent. These 2 categories of interventions could collectively curb juvenile crime to a greater extent in the urban spectrum

4. Role of Child Psychology in Juvenile Delinquency

Psychological factors play a pivotal role in shaping juvenile deviance, with influences from both nature and nurture (Morgan, 1973). Mental health conditions can have early warning signs that eventually manifest as delinquent behaviour. Conduct disorder or lack of empathy and disregard for societal norms is a typical one. (Phogat, 2017). During adolescence, attitudes are significantly moulded, and social connections become crucial in shaping capabilities and mental processes. (Morgan, 1973) A minor who lacks a formal education and is less intelligent is more likely to engage in delinquent behaviour. Compulsive actions,

uncontrolled hostility, and an incapacity to postpone satisfaction also take over. (Phogat, 2017) Understanding the motivations and behaviours of offenders reveals biological, social, and environmental influences playing significant roles in developing prosocial or aggressive behaviour (Morgan, 1973).

Moreover, poor mental health and adverse childhood experiences can profoundly impact brain function, leading to aggressive behaviour and criminal tendencies (Dzyuban, 2010). The interplay between social and biological factors can obscure the perception of free will, contributing to a lack of guilt among offenders. The deterrence theory suggests that the perceived rewards and costs associated with crime influence individuals' decisions to engage in criminal behaviour (Tiwari, 2020). Psychologists classify juvenile offenders based on individual characteristics and psychological dynamics. Reasons for juvenile crimes include discrimination, stereotypes, and early gang influence (Horschelmann & Blerk, 2011). People aged 15-19 are more likely to be investigated for crimes, with juveniles' immaturity making them susceptible to psychosocial problems and exacerbating criminal behaviour (J.Jayabharath & V.Udayavani, 2018).

5. Environmental Psychology- Influence of the Neighbourhood and its Associated Social Fabric

Neighbourhood dynamics profoundly impact behaviour and crime rates, with architecture and urban layout serving as influential factors. The built environment can either encourage or deter criminal activity by shaping cognitive behaviours and social interactions. Factors such as land use, physical infrastructure, and environmental conditions contribute to crime prevalence, particularly in densely populated urban areas (Horschelmann & Blerk, 2011). Social fabric features, including community cohesion and spatial definitions, play crucial roles in crime prevention. (Horschelmann & Blerk, 2011).

Some young people start using drugs at a younger age and are motivated to commit crimes to obtain money for drugs or the illegal use of legal substances. When using drugs and alcohol, juveniles are much more likely to partake in destructive, harmful, and illegal activities. (Phogat, 2017). Community policing fosters cooperation and upholds moral codes, though interactions within communities can also perpetuate criminal behaviour (Tiwari, 2020). Socialisation acts as a check on deviant tendencies, but societal factors like prejudice, discrimination, and economic hardships can exacerbate deviant behaviour (Morgan, 1973).

Children raised in impoverished neighbourhoods face heightened risks of mental health issues and involvement in crime, influenced by factors like poverty, discrimination, and social isolation (Tiwari, 2020) (Boyle, et al., 2019). Inadequate parental supervision, persistent parental dissonance, exclusion, and maltreatment (mental or bodily) are potential reasons for deviance. Children who see their parents as disrespectful of the law and social conventions are likely to think the same way. Juveniles who exhibit the least amount of attachment to their parents and families partake in inappropriate activities. (Phogat, 2017) Understanding these complex interplays is essential for effective crime prevention and community development initiatives.

6. Existing/Suggested Crime Preventive Strategies Through Design

Violence prevention encompasses primary, secondary, and tertiary methods (Mathéy & Matuk, 2014), with architecture playing a crucial role in law enforcement and governance (Katyal, 2002). Architectural features like concrete barriers and natural surveillance aid in apprehending offenders and intervening in developing incidents, while fostering public

confidence in law enforcement. Additionally, architecture can facilitate governance by empowering communities to address wrongdoing and shaping perceptions of lawbreaking (Katyal, 2002). Crime and violence prevention strategies involve combining social elements, strengthening legal and security apparatus, community involvement, addressing root causes of violence, redesigning environments, and regular program assessment and modification (Horschelmann & Blerk, 2011). Various theories, including social disorganization, defensible space, CPTED, rational choice, routine activity, and criminal motivation, inform violence prevention approaches (Math  y & Matuk, 2014). Defensible space theory emphasizes tangible environmental qualities that empower residents to ensure security, promoting territoriality and a sense of place attachment (Horschelmann & Blerk, 2011) (Parto & Ziabakhsh, 2015). Effective spatial design for crime prevention involves encouraging natural surveillance, fostering territoriality, creating communities, shielding criminal targets, demarcating public and private spaces, conveying security, and considering surrounding environments for optimal safety (Sehgal & Udit Malik, 2018) (Katyal, 2002).

CPTED is a holistic approach that addresses environmental factors influencing crime. Its emphasis on spatial design, collaboration between stakeholders, and socio-cultural considerations makes it a valuable framework for efficient crime prevention in diverse urban settings. Defined by criminologist C Ray Jeffery in 1971, it involves appropriate planning and efficient use of the built environment to lower crime rates, decrease fear, and enhance the quality of life (Naik & Z.A.Syed, 2016). CPTED is efficient as a crime preventive strategy as environmental determinants play a significant role in crime occurrence. It is effective in creating a comprehensive preventive framework for various urban neighbourhoods. It is suitable for research on preventive measures for juvenile-specific crime.

7. Comparative Inferences of CPTED Internationally

The following table has been derived through the analysis of CPTED guidelines documents of the 3 selected countries. The locations of the countries have been selected based on their cultural and zonal differences to obtain a more holistic outlook on CPTED strategies around the world (understanding commonalities and differences). The crime prevention rates also vary between the 3 (Singapore and Europe have low crime rates while Australia has comparatively higher crime rates), which gives a better perspective on the efficiency of the strategies applied in these locations

Table 1: Comparative analysis of CPTED strategies proposed for Singapore, Western Australia, and Europe

	Singapore	Western Australia	Europe
Process/ Approach	<ul style="list-style-type: none"> i. Natural surveillance ii. Natural access control iii. Territorial reinforcement iv. Maintenance and management (Council, 2003) 	<ul style="list-style-type: none"> i. Surveillance (Passive and Active) ii. Territorial Definition iii. Access control iv. Space Management (Department of Planning, 2021) 	<ul style="list-style-type: none"> i. User identity and belonging enhance safety. ii. Vibrant public areas promote surveillance. iii. Prioritize safety for vulnerable populations. iv. Avoid enclosed spaces. v. Consider safety at places with temporary users. vi. Maintain continuous urban grids for self-orientation. vii. Define public and private boundaries. viii. Plan safe circulation routes. ix. Prevent decay to deter crime. x. Support surveillance.

	Singapore	Western Australia	Europe
			xi. Use electronic surveillance in security planning. xii. Address dangers during construction. (DiAP, 2006)
Principles	The 3-D approach, i.e. 1. Designation, 2. Definition 3. Design. (Council, 2003)	Step 1: Identify Risk Step 2: Inform the brief Step 3: Design development CPTED statement Step 4: CPTED assessment Step 5: Deliver + Evaluate (Department of Planning, 2021)	i. The local authority (current body) ii. Corporate team iii. The working group's planning document iv. The local authority's decision v. Agreement among stakeholders vi. Evaluation of results vii. Actions and works implementation viii. Possible remedial measurements (DiAP, 2006)
Strategies	i. Allow for clear sight lines ii. Provide adequate lighting iii. Minimise concealed and isolated routes iv. Avoid entrapment v. Reduce isolation vi. Promote land use mix vii. Use of activity generators viii. Create a sense of ownership through maintenance and management ix. Provide signs and information x. Improve the overall design of the built environment. (Council, 2003)	Surveillance, territorial definition, access control, and space management in terms of: <ol style="list-style-type: none"> i. Neighbourhoods and precincts ii. Residential and mixed-use streets iii. Public spaces iv. Activity centres v. Public transport hubs vi. Pedestrian and cycling networks vii. Pedestrian access ways viii. Community Infrastructure ix. Car parking x. Crowded places (Department of Planning, 2021) 	URBAN PLANNING STRATEGIES: Examining current social and physical frameworks, ensuring accessibility and preventing enclaves, creating vitality, providing mixed status, encouraging a sufficient urban density, steering clear of wasteland and physical barriers URBAN DESIGN STRATEGIES: Continuity of the urban fabric, venue for the events, schedule and time of events, visibility, accessibility, territoriality, attractiveness, the ability of the materials to resist deterioration MANAGEMENT STRATEGIES: Maintenance, surveillance, behaviour regulation, public group recognition/communication, target hardening (DiAP, 2006)

Source: Author

8. Case Area

8.1. Carter Road, Bandra, Mumbai (Naik & Z.A.Syed, 2016)

Carter Road Promenade is a prime urban social hub along the coast of Bandra, Mumbai. Despite being a hub, safety is compromised, evident in crime statistics. Mumbai's social dynamic has a long history of impoverished neighbourhoods with high crime rates and communal variation. Although, notably, religious processions in the Dharavi slum serve as bridges for social connection, especially between Muslim and Hindu communities (Mathéy & Matuk, 2014).

8.2. Clason Point Gardens, South Bronx, New York (Newman, 1997)

Clason Point Public Housing Complex is in the South Bronx, a relatively crime-ridden neighbourhood in New York City. It consists of a 400-unit complex with 46 buildings, primarily row homes. It is highly dense with 25 units per acre, allowing 0.15 parking spaces per unit. It was vacant by 30% due to its dilapidated state. Messy, open grounds and unfinished cement block structures distinguish it from nearby independently owned red-brick row residences. Conflict between different racial and generational groups was frequent in undesignated public spaces. Teenagers from nearby streets assembled on the grounds leading to fear and anger among Clason Point residents.

8.3. Comparative Inferences of Crime Preventive Approaches

The design interventions applied in Carter Road and Clason Point Gardens to improve the safety of the area and reduce its associated crimes can be tabulated into 6 broad categories although their contexts and crimes vary from each other.

Table 2: Comparative inferences of crime preventive strategies applied in an Indian and an International context

Intervention Category	Carter Road	Clason Point Gardens
Territoriality	<ul style="list-style-type: none"> - Create sub-neighbourhoods to enhance the local character. (Naik & Z.A.Syed, 2016) 	<ul style="list-style-type: none"> - Assigning control of public lands to control small groups/families - Low curbs and walkways in front of each unit. (Newman, 1997)
Access control	<ul style="list-style-type: none"> - Cul-de-sacs connected by pedestrian routes and not visible open spaces to be avoided - Avoid back lanes without surveillance - Avoid multiple escape routes. (Naik & Z.A.Syed, 2016) 	<ul style="list-style-type: none"> - Reducing the number of pedestrian routes (Newman, 1997)
Surveillance	<ul style="list-style-type: none"> - Extremely safe activities in less safe areas and less safe activities in safe areas - Maximizing vision and natural surveillance in public spaces (Naik & Z.A.Syed, 2016) 	<ul style="list-style-type: none"> - Additional lighting to facilitate evening use - Monitoring due to emotional connection created - outdoor seating areas (Newman, 1997)
Maintenance	<ul style="list-style-type: none"> - Public and private sector organizations to have clear responsibilities for spatial management. - Procedures for reporting issues and resolving them. (Naik & Z.A.Syed, 2016) 	<ul style="list-style-type: none"> - Resurfacing facades with different colours and materials - Beautify each row house (Newman, 1997)
Use of spaces	<ul style="list-style-type: none"> - Design communities with supplemental land uses and services. (Naik & Z.A.Syed, 2016) 	<ul style="list-style-type: none"> - Segregated areas for separate age groups to avoid intergenerational disputes - Enticing through design to spend time outdoors (Newman, 1997)
Target hardening	<ul style="list-style-type: none"> - Installing traffic control components - Implementing site-specific security measures. (Naik & Z.A.Syed, 2016) 	<ul style="list-style-type: none"> - Six-foot iron fencing behind houses (Newman, 1997)

Source: Author

9. Comprehensive Architecture, Planning, and Design Interventions as Crime Control

To prevent crime in Indian cities, promote mixed land uses, strategically position religious structures, periodically review zoning, and encourage long-term residency to maintain

community standards. Governments can lower crime rates by enhancing street lighting, optimizing public transit placement, selectively closing streets with attractive barriers, implementing natural surveillance through greenery and maintenance, and expanding traffic control measures to increase foot traffic. Design principles should balance visibility and openness, use natural surveillance, encourage territoriality, incorporate safety measures, control access routes, foster community building, and employ other architectural strategies such as deterring graffiti, increasing the cost of crime, reducing crowding with natural light and rectangular rooms, and incorporating greenery to decrease aggression (Katyal, 2002) (Dzyuban, 2010).

10. Results: Applicability of CPTED for Juvenile Crimes

Combining research on juvenile delinquency with thoughtful architectural planning offers promise in improving the lives of troubled adolescents and fostering a more empathetic approach to juvenile justice. Through the various case studies and literature referred to, a framework has been derived that decodes the application of a modified CPTED that guides the prevention of juvenile crimes. The first analysis pins down the factors leading to the 4 statistically highest crimes among juvenile criminals. This then extrapolates to understand crime preventive design mechanisms in a holistic perspective under 2 aspects:

- Preventing the creation of a juvenile deviant
- Preventing juvenile crime or victimisation

10.1. Framework of Juvenile Crimes and Their Associated Factors

Based on the juvenile crime statistics in India, four crime typologies were seen to be the highest among children- Murder/attempt to murder, assault, rape/attempt to sexually assault, and theft/robbery (Bureau, 2021). This statistic leads this study to focus on these typologies, understand the predominant factors leading to these crimes, and derive crime prevention strategies on multiple levels based on the factors assessed.

Table 3: Highest crimes committed by juveniles in India and their associated factors

1. Murder and attempt to murder	2. Assault	3. Rape and attempt to sexually assault	4. Theft and robbery
Psychological/ Sociological factors i. Nature-based aggression ii. Nurture-based aggression iii. Abandonment iv. Abusive family v. Inequality vi. Trauma due to abuse vii. Diminished parental capacity viii. Societal repression ix. Peer/criminal influence x. Alcohol/drug problems xi. Impulsive behaviour xii. Mental health disorders	Psychological/ Sociological factors i. Discrimination ii. Mental health disorders iii. Lack of education iv. Nature-based aggression v. Nurture-based aggression vi. Diminished parental capacity vii. Abusive family viii. Lack of law-abiding guardians ix. Societal repression x. Peer/criminal influence xi. Alcohol/drug problems xii. Coercive parents	Psychological/ Sociological factors i. Societal Discrimination ii. Sexual discrimination within families iii. Lack of education iv. Abusive family v. Trauma due to abuse vi. Mental health disorders vii. Nature-based aggression viii. Nurture-based aggression ix. Peer/criminal influence x. Alcohol/drug problems xi. Diminished parental capacity	Psychological/ Sociological factors i. Poverty ii. Discrimination iii. Lack of education iv. Diminished parental capacity v. Lack of law-abiding guardians vi. Societal repression Neighbourhood design factors i. Lack of surveillance ii. Dilapidated building/infrast

1. Murder and attempt to murder	2. Assault	3. Rape and attempt to sexually assault	4. Theft and robbery
<p>Neighbourhood design factors</p> <ul style="list-style-type: none"> i. Lack of surveillance ii. Lack of communal activity spaces iii. Concealed routes iv. Entrapment spaces v. Lack of lighting vi. Lack of active streets vii. Easy escape routes 	<p>xiii. Impulsive behaviour</p> <p>Neighbourhood design factors</p> <ul style="list-style-type: none"> i. Lack of surveillance ii. Lack of communal activity spaces iii. Concealed routes iv. Entrapment spaces v. Lack of lighting vi. Lack of active streets vii. Easy escape routes 	<p>xii. Abandonment</p> <p>xiii. Impulsive behaviour</p> <p>Neighbourhood design factors</p> <ul style="list-style-type: none"> i. Lack of surveillance ii. Concealed routes iii. Entrapment spaces iv. Lack of lighting v. Lack of active streets vi. Easy escape routes 	<p>structure conditions</p> <ul style="list-style-type: none"> iii. Lack of territoriality iv. Lack of lighting v. Lack of active streets vi. Easy escape routes

Source: Author

10.2. Framework of Interventions for Juvenile Crime Prevention

The results of the study culminate into a framework of design interventions that can prevent and eventually eradicate juvenile crime in dense urban neighbourhoods.

10.2.1. Preventing the Creation of Juvenile Criminals / Future Criminals

This set of interventions helps elevate the psychological stability and morale of children growing up in a community. The interventions aim to improve social security, peaceful and inclusive communal bonds, neighbourhood interaction, intellectual upliftment, and holistic psychological development of children.

- **Improving interaction**

- i. Incorporation of community spaces between residential areas
- ii. Promoting active interstitial spaces based on community behaviour pattern
- iii. Religious and cultural spaces integrated to evolve morality and establish communal bonding
- iv. Adaptive streets that support temporary transformation to incorporate community activities and temporary playscapes at regular intervals.
- v. Converting dead spaces into activity hubs by introducing incentives for public gathering and leisure like parklets

Improving social interaction fosters a sense of community, reduces feelings of isolation, and promotes positive relationships. When children are engaged in supportive social networks, they are less likely to feel marginalised as they have healthier outlets for emotional expression and guidance from peers and adults. Limitations in implementing new interaction hubs may arise in locations too congested to undergo sufficient change.

- **Eradicating negative subconscious conditioning**

- i. Maintenance of buildings to avoid the establishment of a sense of poverty subconsciously
- ii. Scale of buildings to be on par with human scale
- iii. Avoiding monotony in spaces while also not cramping up or cluttering the spaces
- iv. Policies to provide housing with good living conditions and frequent maintenance
- v. Zoning reviews and consistent infrastructure development to ensure long-term settlements that build a strong community

Positive neighbourhood design can create environments that promote safety, inclusivity, and positive social behaviour. This can reduce stress, aggression, and fear while fostering a sense

of belonging and security. Such environments help shift subconscious associations toward positive behaviours, decreasing deviant actions. Infrastructural development may be hampered due to a lack of implementation of proposed government policies.

- **Natural surveillance**

- i. Ensure that community policing monitors children and their well-being within their families as well as in the public domain
- ii. Residential doors that face each other to promote better interaction and passive surveillance

The constant passive monitoring by the community promotes accountability and helps create safer environments, deterring potential misconduct and young people are less likely to engage in criminal activities due to the standard of morale created. The possible limitation here is the lack of privacy induced due to excessive openness and surveillance.

- **Improving juvenile mental health**

- i. Stimulative and educational environment
- ii. Policies to ensure better child safety and education
- iii. Using appropriate colours to ensure emotional control and reduce aggression. (using blue, green, or pink can have a calming effect)
- iv. Improving the feeling of spaciousness to reduce aggression.
- v. Biophilic intervention to decrease aggressive behaviour.

Calm, well-designed spaces with green areas, recreational opportunities, and visually appealing surroundings promote emotional well-being, encouraging positive social interactions and healthy psychological development, eventually reducing the likeliness of deviant activities.

10.2.2. Preventing the Occurrence of Juvenile Crimes or Victimization

These interventions cater towards resolving the criminal mentality budding among children. They aim to strategically prevent children from committing crimes by creating appropriate social and environmental cues. This would also prevent adult criminals from committing crimes against children, thereby preventing children from moving towards crime as a trauma response.

- **Surveillance**

- i. Building windows, balconies, etc. that overlook the streets, interstitial community spaces, and empty open spaces/car parks.
- ii. Avoiding the creation of isolated residences
- iii. Well-lit streets with clear sightlines
- iv. Street furniture at regular intervals that are well-maintained to promote activities
- v. Designing community spaces such as parks to be in continuous public eye
- vi. Visually permeable fencing and shop fronts
- vii. Short shrubs and tall canopy trees to ensure clear sightlines
- viii. Subdividing large open spaces to promote surveillance and activity.

Passive surveillance prevents crime by integrating design features to enhance visibility, making it harder for criminal activities to go unnoticed. This creates a perception of constant observation, deterring potential offenders. However, limitations include the high cost of implementing such designs and potential privacy concerns.

- **Territoriality**

- i. Territorial definition by using curbs, short shrubs, aesthetic, and well-maintained fencing, etc.
- ii. Incorporating small private gardens near entrances to define ownership
- iii. Boundary to be short and permeable to allow the visibility of well-lit buildings
- iv. Mixed use of spaces by integrating multiple activity typologies such as commercial, residential, recreational, etc to keep the area constantly active
- v. Diverse housing options to avoid communal isolation
- vi. Avoiding the creation of concealed spaces by maintaining consistent setbacks
- vii. Smaller residential communities to avoid isolation and anonymity
- viii. Creating community identity by making separate units appear harmonious in their aesthetic

When individuals feel a connection to and control over their environment, they are more likely to monitor and protect it, discouraging criminal activities. However, the potential for excessive territorial boundaries to create exclusivity or alienation possibly increases social divides. Additionally, territorial markers might not be effective if the community lacks a strong sense of engagement or if broader social issues are not addressed.

- **Access control**

- i. Smooth connectivity routes for pedestrians and cyclists
- ii. Maintaining empty plots from rough vegetation growth and unprecedented activities
- iii. Barricading spaces that could be used as escape routes or maintaining them well with enough visibility
- iv. Pedestrian access to be made on one level with proper paving for more activity
- v. Designing legible routes and signages for children
- vi. Addition of physical elements such as bollards, vegetation strips, or furniture along pedestrian pathways to prevent vehicular access
- vii. Public transport facilities to be designed for convenient access by children through appropriate scale, clear signages, and aesthetic appearance.
- viii. Multiple well-defined entries and exits
- ix. Short, straight access ways while avoiding the formation of dead-ends and entrapment spaces

By controlling movement, it reduces opportunities for criminal activities and enhances residents' sense of security. However, the potential for creating a fortress-like environment, which can isolate communities or reduce social interaction is a limitation. Additionally, access control may be costly to implement and maintain.

- **Maintenance**

- i. Maintenance of the facades and streets to avoid the dilapidated appearance of the buildings
- ii. Ensuring the absence of graffiti and other defaced elements in the public visual space
- iii. Using white lights instead of yellow to make the streets appear safer
- iv. Addition of well-maintained, quality landscaping to elevate the aesthetic and livability factor
- v. Use of strong building materials, especially for access points and boundaries could increase the cost of committing a crime and thereby deter it.

Well-maintained environments discourage vandalism and anti-social behaviour by fostering community pride and deterring potential offenders who may see disrepair as a sign of neglect and lawlessness. Limitations include the cost and resources required for ongoing

maintenance, and the fact that physical upkeep alone may not address deeper social issues like poverty or lack of community cohesion.

11. Conclusion

Crime is not just a situational blunder, but a process that evolves to create strong characteristics in an individual which drive them to exhibit antisocial behaviour. This calls for solutions to be sought out from the beginning of individuals' lives, strengthening their morality through their social and physical environment. Reprimanding delinquency in an individual's childhood is important as the impressionable nature of children can be used positively to mould their characteristics and erase the errors they have committed or can commit.

As the built and natural environment, combined with the dynamic input of the social fabric, shape every aspect of our life, it can very well be utilized to influence early psychological aspects. Spatial quality can instantly influence children and the community they encounter, and can thereby also educate, and protect them, both consciously and subconsciously. While CPTED focuses on promoting crime prevention in the urban spectrum, it is also crucial to incorporate factors that could eradicate the spark of antisocial behaviour from the beginning stages of human growth, which is also possible through the right stimulus created by environmental design.

This study can eventually be extrapolated to create holistic communities that eradicate antisocial or aggressive behaviour of the next generation of children and rehabilitate persisting delinquency among children as juveniles have the capability of growing out of crime (Academy, 2023). This would make the urban fabric safe through crime preventive measures that would remove the crime opportunities from children or them becoming victims of the same. The intersection between architecture, criminology and child psychology creates a broad spectrum of study points, contributing to more than one field. This makes the study unique with its multidimensional perspective towards crime prevention.

The proposed interventions would have challenges in implementation as the involvement of multiple stakeholders would be required. Local government/private bodies need to collaborate with urban designers and architects at various stages. The variability of human settlements, especially in a country like India with its vast cultural, social, and economic differences, could pose a challenge as different communities would require different approaches. The uncertainty of space, high population density, and cultural variation in low-income urban neighbourhoods add to the challenges in creating a standardised set of interventions. Studying the communal variables systematically could further provide customized interventions, leading to better results in crime prevention.

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